

## CAN AMERICAN MANUFACTURING BE SAVED?

WHY WE SHOULD AND HOW WE CAN



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### Idea Jam Explores Future of Jobs in San Diego

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On November 7, 2014, I attended the "Idea Jam - Innovating for the Future" session put on by the [Pacific Center for Workforce Innovation](#) in San Diego. The purpose of the session was to identify the major challenges to the San Diego workforce in the coming years and to generate audience participation in visioning exercises to explore new and innovative workforce development ideas. The event was held at Colman University, and major sponsors were SDG&E, Qualcomm, the Eastridge Group, Point Loma Nazarene College, and Cal State University, San Marcos.

To get our creative juices flowing, Master of Ceremonies, Susan Taylor, San Diego's TV news icon, introduced Futurist Speaker, Thomas Frey, of the [DaVinci Institute](#) as the keynote speaker. It is difficult to do justice to his very visual presentation of images of break-through technologies, but his statements alone created much food for thought about the future. He stated, "We are a backward-looking society...the future gets created in the mind. The future creates the present...Visions of the future affect the way people act today." He rhetorically asked, "What are the big things that need to be accomplished today?"

He continued, "Catalytic innovation creates entirely new industries, like electricity did...Most successful companies today are in the second half of the bell curve...the steel industry had its peak employment in the 1980s."



It was a shock to hear him state that "Two billion jobs will disappear by 2030...Every time you download a mobile app, you are eliminating a piece of a job." In answer to his own rhetorical question, "Where will our next generation's jobs come from, he answered, "from new industries that don't exist now." He added, "As you raise the bar for our achievement, we create the new norm."

"Software is heating the world," he proclaimed. "In 2030, there will be 100 trillion sensors in the world. Information is being parsed into small things." He cited some of the new enhanced objects such as: Amazon's Track Car, the Asteroid Moon Micro-imager Experiment (amie) For Smart-1 Mission, the Vitality Glow Cap for medication management, the Ambient Umbrella by Ambient Devices, Mimo's Baby monitor, the flying Nixie camera (a tiny wearable camera on a wrist band in which the wrist straps unfold to create a quadcopter that flies, takes photos or video, then comes back to you), the Philips biometrics coffee maker that can recognize users via their fingerprint and make coffee just the way that individual likes it, and the Pintofeed, calling itself the "first intelligent pet feeder"

He explained that "we are entering the age of hyperawareness and the quantified self with products such as printable skin sensors, smart body watches, brain hacking, transcranial brain stimulation."

Frey stated, "3D printing is changing the world. The new HP 3D printer has 30,000 spray nozzles and can utilize over 200 materials. The *iBox Nano* is now the world's *smallest, least expensive 3D* resin printer. Even shoes can be 3D printed, and Contour Crafting has developed a type of ceramics printing that could be used in construction. Whole walls can now be made by 3D printing, and a company in China was the first company to print a small house for under \$5,000. The goal is to print an entire house in one day. In the future, you may live in a printed house...Bio printing can now print skin, veins, organs like a liver, limbs, and an exo skeleton, and there is a pill printer that chemprints antibiotics." He quoted Chris Anderson, former editor of WIRED magazine and now cofounder and CEO of 3DRobotics, as saying, "3D printing is going to be bigger than the internet."

"We need to prepare our children for jobs that don't exist and technology that hasn't been invented, he declared...By 2030, the average person will have to 'reboot' their career six times in their lifetime. To do this, we need to frame our work to train people in a faster way...By 2020, half of all traditional colleges will



disappear."

To facilitate this rapid training, he shared that the DaVinci Institute now offers 11-13-week courses in such topics as 3D printing, web design, game design and development and becoming a drone pilot." He concluded by saying, "The fastest way to create new jobs is to eliminate the old ones out of existence."

In California, the community college system is already providing this type of accelerated, focused training through their certificate programs in such subjects as multimedia, web design, web server maintenance and security, and culinary arts. It will be relatively easy to add new training topics to the curriculum to meet future needs.

After Mr. Frey's predictions of the future, a panel of business leaders discussed what is happening in their industries and what new industries should we focus on. Jeff Nichols from Sempra Energy stated that "San Diego is the nexus of cyber security...Delivering electricity and water is synergistic, so there are opportunities to putting these two together."

Dr. Ed Abeyta from the University of California, San Diego said, "We need to teach skill sets in a non-university setting but he hasn't seen an online program that successfully replaces teaching in person." He added, "We need micro-credentials that you could earn rapidly."

Matt Grob of Qualcomm said, "The companies that change fastest are the small, startup companies. San Diego is very well placed in the robotics industry...UCSD is starting an incubator for robotics" With regard to training, he said, "A combination of a person and a computer are better than a computer or a person alone."

In answer to the question, how do we prepare for the change and foster the culture of change in others? Dr. Abeyta responded, "Humanity had its core values before technology came, and we must instill those in our children. We need to marry the technology with our core values. It is not about getting the answer; it is Are we asking the right questions?" Dr. Smith of West Health commented, "We can teach how to think and not what to know."

The last half of the morning was spent in an idea jam session by small table groups to come up with two ideas: most innovative and most likely to succeed. After lunch, the following panel of



judges discussed the ideas developed by the audience: Molly Cartmill, Semptra Energy, Michael Alston, Qualcomm, and Mary Walter-Brown, Voice of San Diego. After presenting all of the ideas for the 17 different tables, the audience voted on the best ideas for both categories. The best ideas were:

### **Most Likely to Succeed**

"Tinder, but for networking and mentoring." (Note: [Tinder](#) is a matchmaking mobile app that uses GPS technology, in which users can set a specific radius have the option to match with anyone that is within that distance.)

"Industry developed after school programs to build skill sets and networking for specific career areas."

"Change the hiring process from resumes to problem solving practices."

"Retool community centers and libraries to be career path hubs." (my idea at my table)

### **Most Innovative:**

"Programmer boot camps for under-served communities integrated with soft and life skills."

"Establish a mentoring program for retired professionals to share advice and knowledge to persons in transition"

"Implement playgrounds of interests at schools to help students see the possibilities i.e. Maker Spacers & digital playgrounds."

"Geolocation app that reveals available parking, especially in downtown SD via satellite, with timer alerts"

When I think of the fact that I am now on my fourth career path, I can see that six career paths is a realistic prediction for the future. Just like continuous improvement is one of the tools for becoming a Lean company, continuous learning will be a prerequisite for everyone who wants to keep working during their even longer productive lifetime in the future. My definition of success has been to learn something new to the point of proficiency, so I can highly recommend continuous learning to others. It's what makes life interesting, challenging, and fun!